

Appl. No. 10/734,006  
Amdt. dated November 14, 2005  
Reply to Office Action of August 12, 2005

### **REMARKS/ARGUMENTS**

Claims 1-28 are presented for Examiner Torres-Velazquez's consideration. In the Office Action mailed August 12, 2005, the Examiner rejects claims 1-28. Claims 2 and 25 are amended herein; the amendments do not introduce any new subject matter and are fully supported by the Specification as filed for the application. Based on the amendments and remarks made herein, Applicants respectfully request that the rejections be withdrawn and that the application be passed to allowance.

**1. Paragraph 2 of the Office Action Mailed August 12, 2005: Rejection of Claim 2 Under 35 U.S.C. §112, second paragraph.**

In the Office Action mailed August 12, 2005, the Examiner rejects claim 2 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. With respect to claim 2, the Examiner believes that it is not clear if the aliphatic polyester comprises only one polymer or a polymer and polydioxipane-s one. The Examiner believes the claim recites an improper Markush group. The Examiner also believes that a proper Markush language reads "selected from the group consisting of... A, B, C and D". Furthermore, the Examiner believes that in the alternative, the claim can read "one polymer selected from A, B, C, or D" because the Examiner believes that it would be clear that is only one of the polymers listed.

In response to the Examiner's rejection of claim 2, Applicants have amended claim 2 herein and believe that the amendment addresses the Examiner's concern. Applicants respectfully request that the rejection be withdrawn.

**2. Paragraph 4 of the Office Action Mailed August 12, 2005: Rejection of Claims 1-6, 8-12 and 15-28 Under 35 U.S.C. §102(b).**

In the Office Action mailed August 12, 2005, the Examiner rejects claims 1-6, 8-12 and 15-28 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,268,434 issued to Tsai et al. (hereinafter "the Tsai '434 patent"). Applicants respectfully traverse the rejection.

The Examiner believes the Tsai '434 patent discloses a biodegradable nonwoven material that comprises fibers of a thermoplastic composition that comprises: a poly(lactic acid) polymers in a weight amount that is greater than 0 but less than 100 weight percent; a polymer selected from the group consisting of a polybutylene succinate polymer, a polybutylene succinate adipate polymer, and a mixture of such polymer, in a weight amount that is greater than 0 but less than 100

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weight percent. The Examiner believes the biodegradable nonwoven materials may be used in a disposable absorbent product intended for the absorption of fluids, such as body fluids. The Examiner also believes the Tsai '434 patent teaches the construction of continuous filaments and staple fibers. The Examiner also explains that she is equating the poly(lactic acid) polymer to the second polymer of the present invention and the polybutylene succinate or the polybutylene succinate adipate polymer to the aliphatic polyester polymer of the present invention.

Independent claim 1 of the present invention is directed to a biodegradable nonwoven web that is prepared from a polymer blend including from about 65% by weight to about 99% by weight of a biodegradable aliphatic polyester polymer and from about 1% by weight to about 35% by weight of a second polymer that is amorphous. The second polymer is selected from a polymer having a lower melting point than the aliphatic polyester polymer, a polymer having a lower molecular weight than the aliphatic polyester polymer and mixtures of such polymers.

Independent claim 25 of the present invention as amended herein is directed to a method of increasing the tear strength of a biodegradable nonwoven web prepared from a biodegradable aliphatic polyester polymer. The method includes a step of forming a blend of a biodegradable aliphatic polyester polymer and a polymer which is amorphous selected from a polymer having a lower melting point than the biodegradable aliphatic polyester polymer, a polymer having a lower molecular weight than the biodegradable aliphatic polyester polymer and mixtures of such polymers. The method also includes the steps of forming a nonwoven web from the blend and bonding the nonwoven web.

Independent claim 26 of the present invention is directed to a fiber from a polymer blend where the polymer blend includes from about 65% by weight to about 99% by weight of a biodegradable aliphatic polyester polymer and from about 1% by weight to about 35% by weight of a second polymer which is amorphous. The second polymer is selected from a polymer having a lower melting point than the aliphatic polyester polymer, a polymer having a lower molecular weight than the aliphatic polyester polymer and mixtures of such polymers.

In order to anticipate, a reference must teach each and every element of the claimed invention. Each of independent claims 1, 25 and 26 includes a polymer blend of a biodegradable aliphatic polyester polymer a second polymer that is amorphous. In the Office Action dated August 12, 2005, the Examiner explains that she is equating the poly(lactic acid) polymer to the second polymer of the present invention. The Tsai '434 patent does not disclose a second polymer that is amorphous. On the contrary, the Tsai '434 patent discloses that "it is generally desirable to maximize the crystallization of the poly(lactic acid) polymer material before the bonding stage".

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(See Col. 12, lines 17-27 of the Tsai '434 patent). Because the Tsai '434 patent discloses a crystallized poly(lactic acid) polymer, the poly(lactic acid) polymer can not be used as an example of a second polymer that is amorphous. Therefore, with respect to independent claims 1, 25 and 26, the Tsai '434 patent does not disclose each and every element of the invention as claimed. Applicants respectfully request that the rejection be withdrawn.

Dependent claims 2-6, 8-12, 15-24 and 27-28 are also patentable over the Tsai '434 patent for at least the reason that they depend from independent claims 1 and 26. Therefore, Applicants respectfully request that the rejection be withdrawn with respect to these claims as well.

**3. Paragraph 5 of the Office Action Mailed August 12, 2005: Rejection of Claims 1-6, 8-12 and 15-28 Under 35 U.S.C. §102(b).**

In the Office Action mailed August 12, 2005, the Examiner rejects claims 1-6, 8-12 and 15-28 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,976,694 issued to Tsai et al. (hereinafter "the Tsai '694 patent"). Applicants respectfully traverse the rejection.

The Examiner believes the Tsai '694 patent relates to thermoformable ion-sensitive compositions and water-dispersible thermoformable articles, such as fibers. The Examiner believes the Tsai '694 patent teaches compositions that comprise at least one water-sensitive polymer, desirably a copolyester, and at least one additional polymer such as polylactide (PLA). The Examiner also believes the weight ratio of water-sensitive polymer to the at least one additional polymer component is from about 6:40 to about 90:10. Further, the Examiner believes the Tsai '694 patent teaches that the water-sensitive fibers may be formed by meltblowing and spunbonding processes, and by any spinning operation. The Examiner believes the Tsai '694 patent teaches that the water-sensitive composition may be thermoformed into multicomponent fibers, such as sheath/core fibers. Additionally, the Examiner believes nonwoven fabrics containing water-sensitive fibers may be formed from a single layer or multiple layers. The Examiner believes the Tsai '694 patent further teaches different applications that read on the applications/uses claimed herein.

Independent claims 1, 25 and 26 are directed to the subject matters described above. Each independent claim relates, at least in part, to a polymer blend that includes a biodegradable aliphatic polyester polymer. The Tsai '694 patent relates to compositions that include a "water-sensitive polymer". In the Office Action mailed August 12, 2005, the Examiner equates the "water-sensitive polymers" of the Tsai '694 patent with the biodegradable aliphatic polyester polymers of the present invention. The two types of polymers are not the same. The Tsai '694 patent

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discloses that the water-sensitive polymer can be a copolyester and discloses desirable functional characteristics of the water-sensitive polymer as well as specific examples at Col. 3, line 53 to Col. 4, line 7 of the Tsai '694 patent. However, none of the polymers described as being suitable water-sensitive polymers in the Tsai '694 patent are the same as the biodegradable aliphatic polyester polymers of the present invention (e.g. See page 7, lines 13-21 of the Specification as filed for the present application). Therefore, the Tsai '694 patent does not disclose each and every element of the present invention as claimed. Applicants respectfully request that the rejection be withdrawn.

Dependent claims 2-6, 8-12, 15-24 and 27-28 are also patentable over the Tsai '694 patent for at least the reason that they depend from independent claims 1 and 26. Therefore, Applicants respectfully request that the rejection be withdrawn with respect to these claims as well.

**4. Paragraph 6 & 7 of the Office Action Mailed August 12, 2005: Rejection of claims 1-6, 8, 9-12 and 15-28 Under 35 U.S.C. §103(a).**

In the Office Action mailed August 12, 2005, the Examiner rejects claims 1-6, 8, 9-12 and 15-28 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,506,873 issued to Ryan et al. (hereinafter "the Ryan patent") in view of the Tsai '434 patent.

The Examiner believes the Ryan patent relates to nonwoven fibrous material, which includes a plurality of polylactide containing fibers. The Examiner believes the nonwoven can have utility in medical, hygiene, disposable and durable nonwoven applications where biodegradability can advantageously be combined with a fabric or laminate function. The Examiner also believes some applications are diapers, training pants, feminine absorbent articles, among others. Further, the Examiner believes the preferred fibers include at least one component, polylactide or polylactic acid (PLA). The Examiner believes the Ryan patent teaches multicomponent fibers that include at least one component based upon polylactide and at least one additional component, which may be based upon polylactide or upon a material other than polylactide. Additionally, the Examiner believes the Ryan patent teaches that preferred meltstable polylactide compositions preferably include a lactide concentration of less than about 2% by weight. With respect to the Ryan patent, the Examiner believes the polymers that can be used as other components in a multicomponent fiber include polyolefins, polyamides, aromatic/aliphatic polyesters, biodegradable aliphatic polyesters and biodegradable aliphatic-aromatic polyesters. The Examiner believes the Ryan patent also teaches the use of polycaprolactone (PCL), polyhydroxy propionate (or butylate, capreolate or valerate), among others. The Examiner also believes fiber formation processes include melt spinning, melt blowing and spunbonding. Further, the Examiner believes the Ryan

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patent teaches carding. The Examiner acknowledges that the Ryan patent does not disclose percentages of different components in a polymer blend.

The Examiner believes that since both the Ryan patent and the Tsai '434 patent are directed to biodegradable materials, the purpose disclosed by the Tsai '434 patent would have been recognized in the pertinent art of the Ryan patent. The Examiner believes it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the content of the different components and provide the values taught by the Tsai '434 patent with the motivation of producing materials suitable for use in disposable absorbent products as disclosed by the Tsai '434 patent [sic- the Ryan patent].

In order to establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP §2143. The Examiner bears the initial burden of establishing the *prima facie* case. See In re Piasecki, 223 U.S.P.Q. 785,787, 745 F.2d 1468, 1471 (Fed. Cir. 1984). Applicants respectfully submit that neither the Ryan patent nor the Ryan patent in view of the Tsai '434 patent teach or suggest all of the limitations of the invention as claimed and therefore, a *prima facie* case of obviousness has not been established.

As described herein, each of independent claims 1, 25 and 26 relates, at least in part, to a polymer blend that includes a second polymer that is amorphous. For the reasons provided above, the Tsai '434 patent does not disclose a second polymer that is amorphous. The Ryan patent does not cure this deficiency. The Examiner has not identified any teaching or suggestion in the Ryan patent of a polymer blend including a biodegradable aliphatic polyester polymer and a second polymer that is amorphous. Therefore, neither the Ryan patent alone nor the combination of the Ryan patent and the Tsai '434 patent teaches or suggests all of the limitations of the invention as claimed. Applicants respectfully request that the rejection be withdrawn.

Dependent claims 2-6, 8-12, 15-24 and 27-28 are also patentable over the Ryan patent in view of the Tsai '434 patent for at least the reason that they depend from independent claims 1 and 26. Therefore, Applicants respectfully request that the rejection be withdrawn with respect to these claims as well.

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**7. Paragraph 8 of the Office Action Mailed August 12, 2005: Rejection of Claims 7, 13 and 14 Under 35 U.S.C. §103(a).**

In the Office Action mailed August 12, 2005, the Examiner rejects claims 7, 13 and 14 under 35 U.S.C. §103(a) as being unpatentable over the Ryan patent and the Tsai '434 patent as applied above, and further in view of U.S. Publication 2002/0111596 issued to Fletcher et al. (hereinafter "the Fletcher publication"). Applicants respectfully traverse the rejection.

With respect to claims 7, 13 and 14, the Examiner acknowledges that the Ryan patent and the Tsai '434 patent do not disclose a polymer blend including a second polymer which is amorphous and includes a polyalphaolefin. The Examiner believes the Ryan patent teaches the use of poly-caprolactone. The Examiner also believes the Fletcher publication teaches material suitable for a flushable absorbent assembly and teaches the use of amorphous polyalphaolefin or a poly-caprolactone. The Examiner believes therefore, because these two polymers were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the poly-caprolactone taught by the Ryan patent for polyalphaolefin.

Applicants submit that claims 7, 13 and 14 are patentable over the Ryan patent in view of the Tsai '434 patent for at least the reason that they depend from independent claim 1, which is patentable over this combination. The Fletcher publication does not cure the lack of disclosure of a polymer blend including a second polymer which is amorphous. Furthermore, the Examiner has not provided any reasoning as to why one of skill in the art at the time of the invention would have been motivated to combine the teachings of the Ryan patent, the Tsai '434 patent and the Fletcher publication. Therefore, the Examiner has not established a *prima facie* case of obviousness for claims 7, 13 and 14. For at least these reasons, Applicants respectfully submit that claims 7, 13 and 14 are patentable over the Ryan patent and the Tsai '434 patent in view of the Fletcher publication and request that the rejection be withdrawn.

In conclusion and for the reasons stated above, Applicants respectfully submit that presently presented claims 1-28 are patentable and in condition for allowance.

The Commissioner is hereby authorized to charge any prosecutorial fees (or credit any overpayment) associated with this communication to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875. If a fee is required for an extension of time under 37 C.F.R. 1.136 not accounted for above, such extension is requested and should also be charged to our Deposit Account.

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Respectfully submitted,

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#### CERTIFICATE OF TRANSMISSION

I, Mary L. Roberts, hereby certify that on November 14, 2005 this document is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300.

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